

Key →

1. Which transformation turns every point of the preimage through a specified angle and direction about a fixed point?

F reflection

☒ G rotation

H translation

J dilation

2. Given $B(-4, -6)$, under which reflection is $B'(4, 6)$?

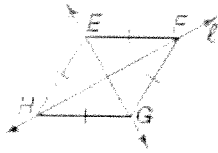
A reflected in the x -axis $(-4, 6)$

☒ C reflected in the origin

B reflected in the y -axis $(4, -6)$

D reflected in the line $y = x$ $(-6, -4)$

3. Name the image of \overline{EF} under reflection in line ℓ .



☒ F \overline{FG}

G \overline{HG}

H \overline{EH}

J \overline{FE}

4. How many lines of symmetry does a regular decagon have?

A 0

B 2

C 5

☒ D 10

5. The point $I(-4, -1)$ is rotated 90° about the origin. What is the image of I ?

F $I'(4, -1)$

G $I'(4, -1)$

☒ H $I'(1, -4)$

J $I'(-1, -4)$

6. What type of dilation occurs with a scale factor of $\frac{1}{4}$?

F enlargement

H congruence transformation

☒ G reduction

J glide reflection

7. Which of the following figures shows a translation?

F



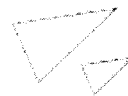
G



☒ H



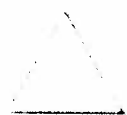
J



8. Name the image of $Z(-13, -5)$ along the translation $(x, y) \rightarrow (x + 4, y + 3)$.

$Z'(-9, -2)$

9. How many lines of symmetry are in the figure below?



- A 0 B 1 C 2 D 3

10. Sue scans a 4-inch picture into her computer. She stretches the picture's length to 10 inches. Find the scale factor she used.

F 6

G $\frac{5}{2}$

H 2

J $\frac{2}{5}$

11. Find the reflection of the point $A(6, -1)$ in the x-axis.

F $A'(6, -1)$

G $A'(-6, 1)$

H $A'(6, 1)$

J $A'(-1, 6)$

12. Which of the following letters have rotational symmetry and or point symmetry or neither?

C

Figure 1

point

A

Figure 2

neither

R

Figure 3

neither

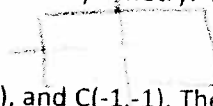
H

Figure 4

Rotational
Symmetry
point

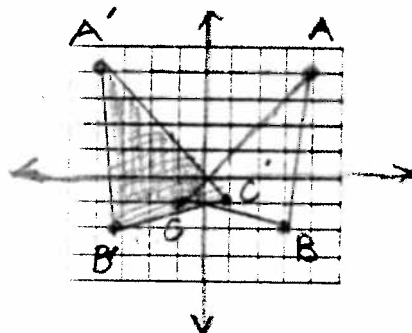
Free Response

13. Name an object that has at least two lines of symmetry. Describe the lines of symmetry in the object. rectangle



14. Graph $\triangle ABC$ with vertices $A(4,4)$, $B(3,-2)$, and $C(-1,-1)$. Then graph the image of

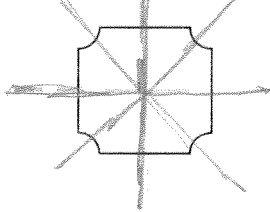
$\triangle ABC$ reflected across the x-axis.



15. Write the mapping that translates $W(9, 3)$ to $W'(2, -2)$?

$$T(x, y) \rightarrow (x-7, y-5)$$

16. Draw the lines of symmetry.



17. If AB is 7 and $A'B' = 14$, is the dilation an enlargement, reduction, or congruence transformation?

18. Find the measure of the image of \overline{AB} if $AB = 9$ under a dilation with scale factor of $\frac{8}{9}$.

$$\overline{A'B'} = 8$$

19. Given $\triangle ABC$ with vertices $A(1, 0)$, $B(6, -7)$, $C(0, -4)$. Find the coordinates of the vertices of the triangle along the translation $(x, y) \rightarrow (x, y - 4)$.

$$A'(1, -4) \quad B'(6, -11) \quad C'(0, -8)$$

20. Which transformations are isometries? Which transformations are not isometries? Explain.

reflections
rotations
translations

Dilations are not isometries because they do not preserve distance.

$$D(x, y) \rightarrow (2x, 2y)$$